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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/704,898	11/02/2000	Firas Abi-Nassif	12144-004001	4528

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FISH & RICHARDSON PC
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BOSTON, MA 02110

EXAMINER

SCHULTZ, WILLIAM C

ART UNIT	PAPER NUMBER
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2664

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/704,898

Applicant(s)

ABI-NASSIF ET AL.

Examiner

William C. Schultz

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 3/29/2002, 1/6/2003 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements have been considered by the examiner.

Drawings

Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 23 is objected to because of the following informalities:

The claim appears to be an independent claim claiming continuing subject matter from the claim above it and probably should have been written as a dependent claim depending from claim 22. Appropriate correction is required.

Claim 25 is objected to because of the following informalities:

The claim appears to be an independent claim claiming continuing subject matter from the claim above it and probably should have been written as a dependent claim depending from claim 24. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 9,10,15,20,21,27, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims 9,15,18,20,21,27, the “MAFRP” or “minimum average forwarding rate percentage” is not enabling for one skilled in the art to make/use the invention. One skilled in the art could not reasonably gauge what values the MAFRP takes on in order to make/use the invention without undue experimentation. The applicant has provided no disclosure on how the values for the MAFRP are limited or even if they are limited or what values go into the MAFRP. So when, on page 12 line 8, of the spec. when one skilled in the art, a network operator, configures a MAFRP for each of the DiffServ classes, there is no disclosure from applicant on how the network operator chooses values of MAFRP without undue experimentation. Still further down

the spec on line 15, what the MAFRP represents is not enough disclosure to remove the undue experimentation on the network operator. The Examiner did multiple searches on google.com and EAST, the term appears to not be a term of art that one skilled in the art would know.

Regarding claim 10, it is rejected for being dependant on a unsearchable base claim.

Regarding claim 18, fails to disclose "a planned recipient level" so that one skilled in the art would know how to make/use the invention. The examiner chose the DRC to represent this language in the art rejection of claim 18.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8,11-14,16,18,22,24,26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jalali et al. [Data Throughput of CDMA-HDR] and further in view of AAPA [Applicant Admitted Prior Art].

Regarding claim 1, Jalali discloses all the following subject matter: a method comprising:

receiving data packets at a communications node, **(pg 1856, col. 1, lines 26-27
– if the scheduler has data to send it must have received it)**

associating each of the received data packets with a rate. **(pg. 1855, col. 1, lines 32-37)**

transmitting packets corresponding to the received data packets to recipients,
and **(pg 1856, col. 1, lines 26-27)**

controlling the order in which packets are transmitted based on the transmission
rate **(pg 1856, col. 1, lines 34-46)**

Jalali fails to disclose that the transmission order is based on the service class of the packets.

Applicant discloses that the DiffServ architecture classifies traffic as it enters the network. **(spec. page 7, lines 11-15)** The classification happens at the same time as the above associating step where the rate of traffic is classified as well. Therefore because the packet is associated by rate it is also classified and when transmission occurs, the transmission is based upon the rate and classification.

It would have been obvious for one skilled in the art at the time of invention modify Jalali et al. with AAPA because the network could more precisely controlled allowing better traffic flow.

Regarding claim 2, AAPA further discloses the transmitted packets comprise physical layer packets. **(page 4 , line 7)**

Regarding claim 3, Jalali et al. further discloses the rates of transmission are controlled based on a time-division multiplexing algorithm. **(pg. 1854, col. 1, lines 3-6)**

Regarding claim 4, Jalali et al. further discloses the node comprises a radio node of a communications protocol. **(title - wireless system)**

Regarding claim 5, AAPA further discloses the communications protocol comprises HDR. **(page 4 , line 7)**

Regarding claim 6, Jalali et al. further discloses the transmitted packets comprise physical layer packets. **(title)**

Regarding claim 7, AAPA further discloses the differentiated services architecture comprises DiffServ. **(page 7 , lines 10-12)**

Regarding claim 8, AAPA further discloses the service classes comprise at least one expedited forwarding class and at least one assured forwarding class. **(page 8, lines 1-4)**

Regarding claim 11, Jalali et al. further discloses the transmission rate is determined by the recipients. **(pg. 1856, col. 1, lines 27-30)**

Regarding claim 12, Jalali et al. further discloses the transmission rates are sent by the recipients using a feedback channel to the node. **(inherently the recipients cannot use the forward link and must use the reverse link to talk back to the node)**

Regarding claim 13, Jalali et al. further discloses the rates of transmission of the packets are controlled by two-level scheduling including a class level in which rates are determined among the classes of service and a recipient level in which rates are determined among the recipients associated with each class. **(pg. 1856, col. 1, lines 34-50)**

Regarding claim 14, AAPA further discloses the recipient level uses the Qualcomm algorithm. **(page. 6, lines 14-18)**

Regarding claim 16, Jalali et al. further discloses class level scheduling is done over a predetermined length window of time slots. **(pg. 1856, col. 1, lines 34-50)**

Regarding claim 18, Jalali et al. further discloses the class level scheduling is based in part on a planned recipient level selection within each class. **(pg. 1856, col. 1, lines 27-30 – DRC)**

Regarding claim 22, Jalali et al. further discloses the class level scheduling selects a class from among a subset of the classes. **(pg. 1856, col. 1, lines 34-50)**

Regarding claim 24, Jalali et al. further discloses the recipient level scheduling selects a recipient from among a subset of the recipients. **(pg. 1856, col. 1, lines 34-50)**

Claims 17,19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jalali et al. [Data Throughput of CDMA-HDR] and further in view of AAPA [Applicant Admitted Prior Art] and further in view of Pankaj et al. [U.S. Pat. 6,229,795]

Regarding claims 17,19, Jalali and AAPA disclose as above but fail to disclose the class level scheduling includes a weighted round robin scheduling algorithm in which the weights correspond to channel quality of the recipients belonging to the respective classes.

Pankaj et al. discloses scheduler includes a weighted round robin scheduling algorithm.

It would have been obvious for one skilled in the art at the time of invention to modify Jalali et al. and AAPA with Pankaj et al. so that the scheduler is fair.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Stolyar et al. [U.S. Pat. 6,590,890] Packet Scheduling over wireless networks.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Schultz whose telephone number is 703-305-2367. The examiner can normally be reached on M-F(7-4)(first bi-week) M-Th(7-4)(second bi-week).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

William Schultz



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